Maximum Value Sampling Results

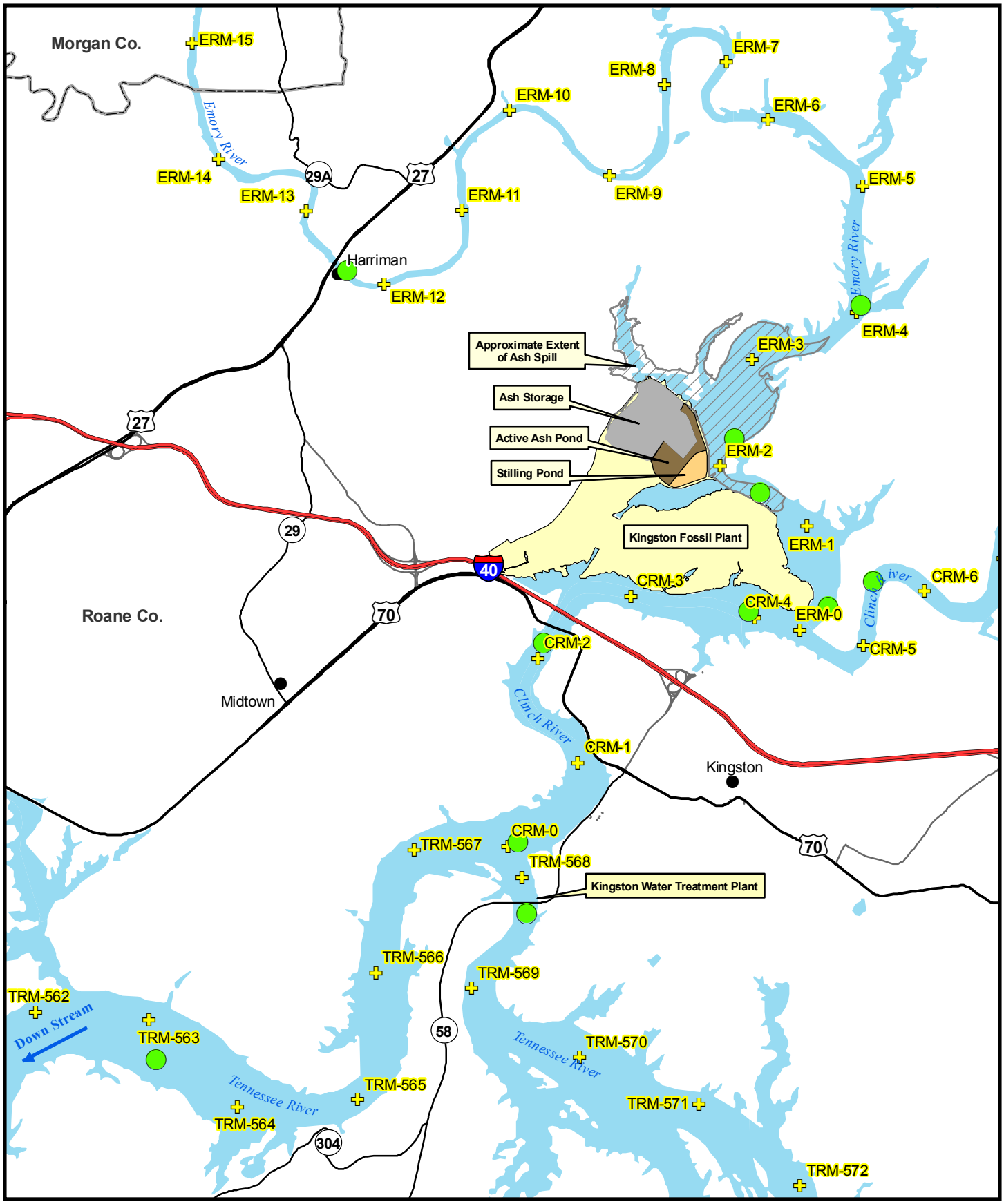
In general, levels of contaminants in water increase as flows increase and decrease as flows recede. The higher flows and higher water velocities cause small particles of solid materials to be suspended in the water column. From the graph showing both the flow and the total suspended solids, you can see that the total solids may increase when the flow in the Emory River increases. These increases indicate storm events. Other parameters (e.g., aluminum, iron, etc.) tend to follow the same pattern. Concentrations of dissolved constituents typically are much lower than the total concentrations of the same constituents, but they also tend to increase and decrease with stream flow.

In the data discussions, you will see designations as “Total” or “Dissolved”. When the word “Total” is used, that means that a water sample is taken directly as it comes out of the river, is treated with acid, and then analyzed. The intent of this procedure is to dissolve or extract constituents of interest from tiny particles of suspended clay, soil, sediment or ash so they can be measured along with the material that is truly dissolved in the water. When the description “Dissolved” is used, that means a water sample is first passed through a filter with a very small pore size before being treated with acid and then analyzed as noted above. The intent of this procedure is to remove the tiny particles of solid materials suspended in the water so that the analysis shows only the constituents truly dissolved in the water.

Only graphs for arsenic, selenium, mercury, flow, and total suspended solids are presented here. Metals are strongly correlated with total suspended solids which is associated with high stream flow. For clarity, the graphs here show only the maximum reading for each metal for any date from nine routine sampling locations.

The map included shows sampling locations in the Emory, Clinch, and Tennessee Rivers.

Routine Surface Water Sampling Locations



Map Compiled: 05/12/2009

Surface Water Sample Locations

0 1 2 3 Miles

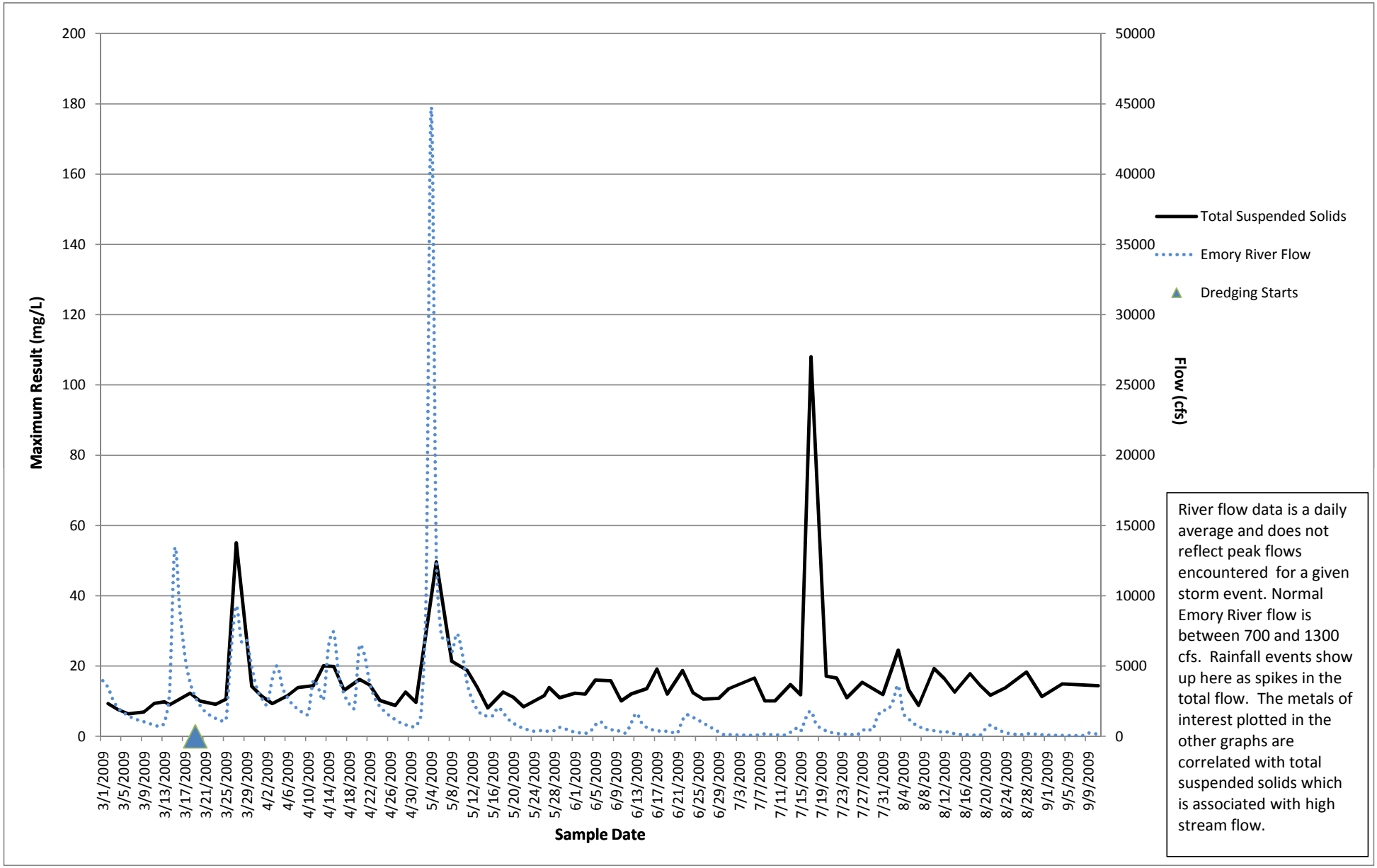
Map Filename: Routine_Surface_Water_Sampling_Locations_05122009_8x11.mxd

Tennessee Valley Authority
OE&R - ER&S
Geographic Information & Engineering

Figure 1

Total Suspended Solids From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers

TVA - Kingston



Note: Results are reported at the lowest concentration that laboratory instruments can reliably measure.

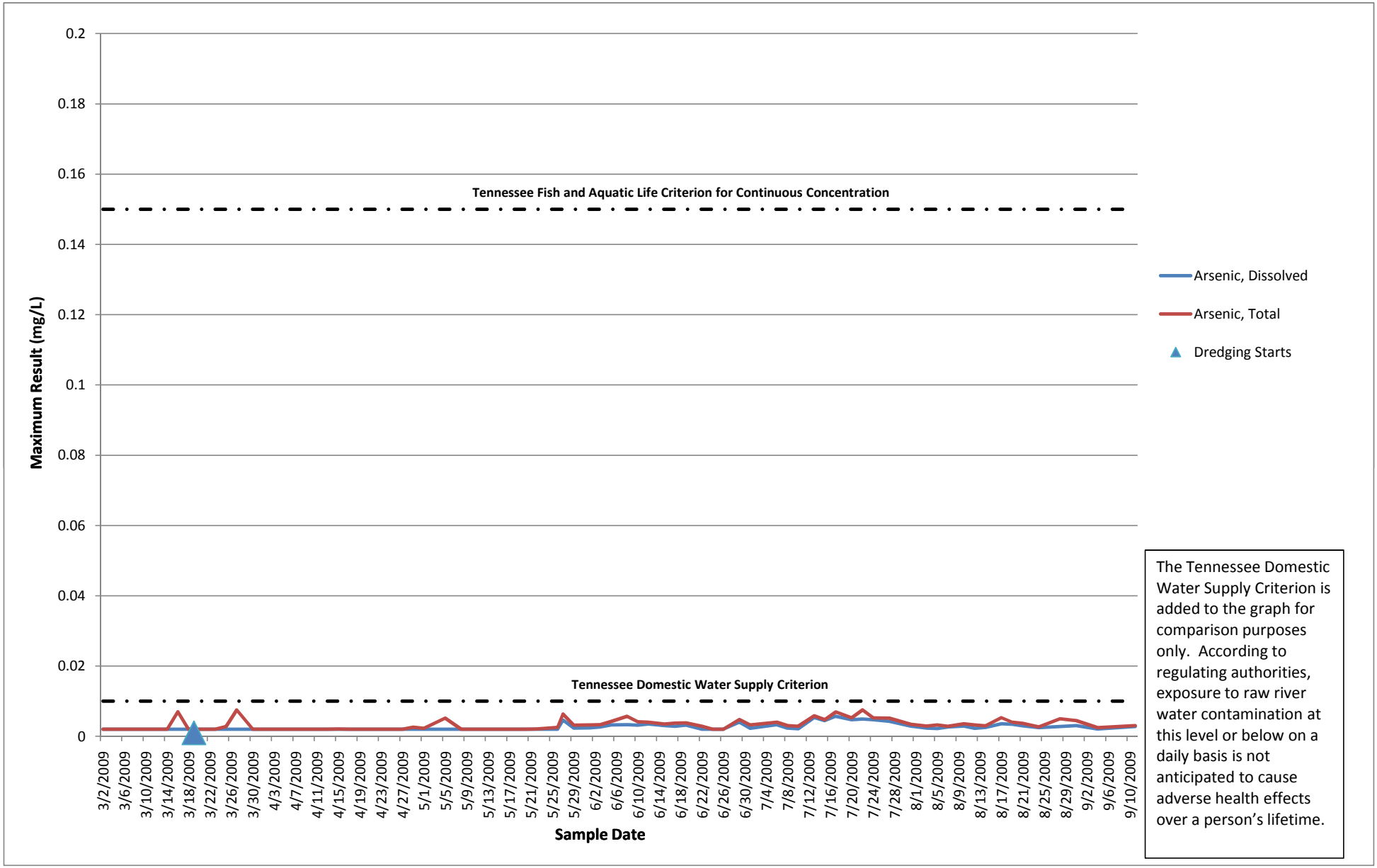
Note: The Result line represents the maximum value reported for Total Suspended Solids From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers for any location for a given day.

Report Generated: 9/23/2009

Figure 2

Arsenic From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers

TVA - Kingston



Note: Results are reported at the lowest concentration that laboratory instruments can reliably measure.

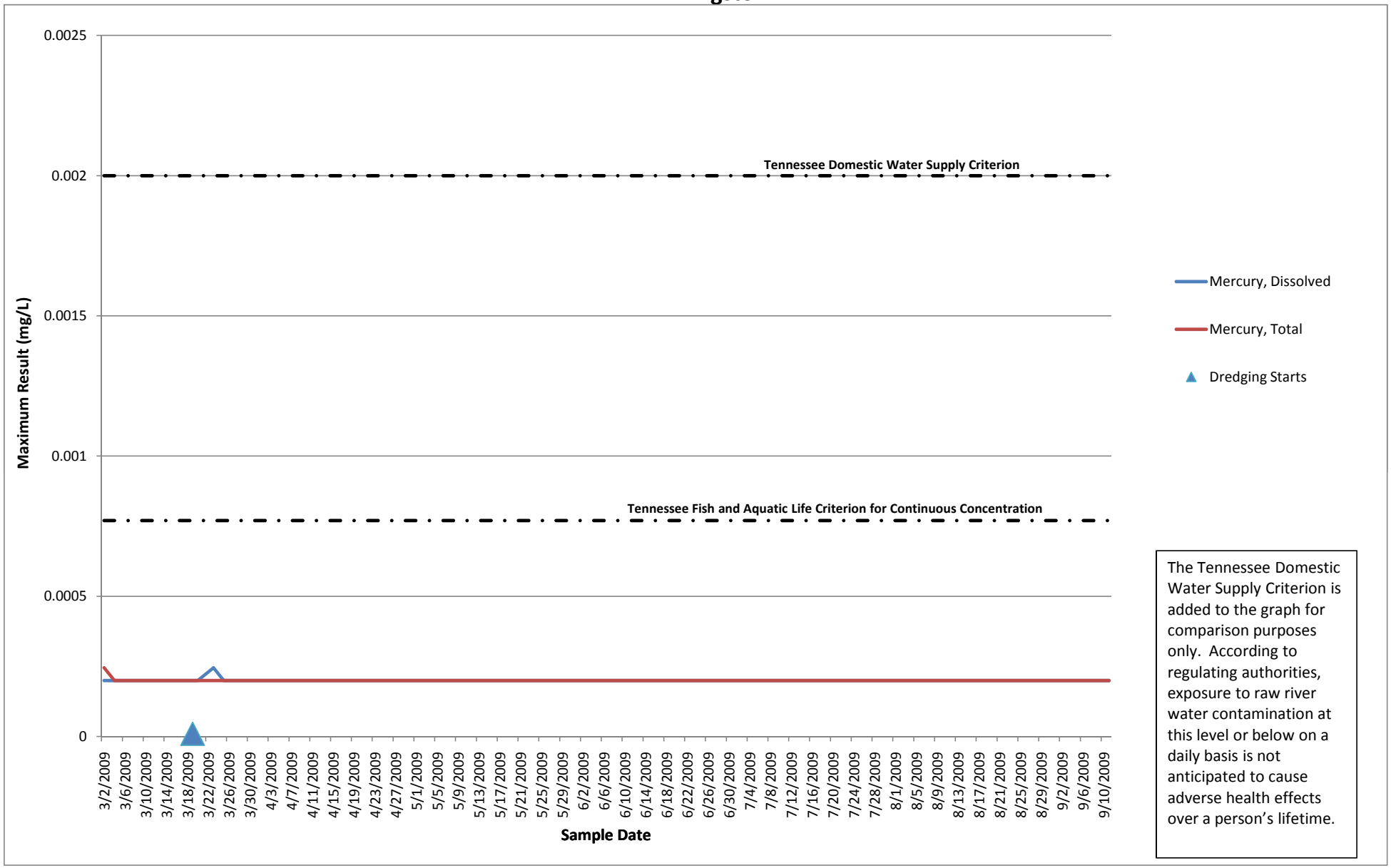
Note: The Result line represents the maximum value reported for Arsenic From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers for any location for a given day.

Report Generated: 9/23/2009

Figure 3

Mercury From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers

TVA - Kingston



The Tennessee Domestic Water Supply Criterion is added to the graph for comparison purposes only. According to regulating authorities, exposure to raw river water contamination at this level or below on a daily basis is not anticipated to cause adverse health effects over a person's lifetime.

Note: Results are reported at the lowest concentration that laboratory instruments can reliably measure.

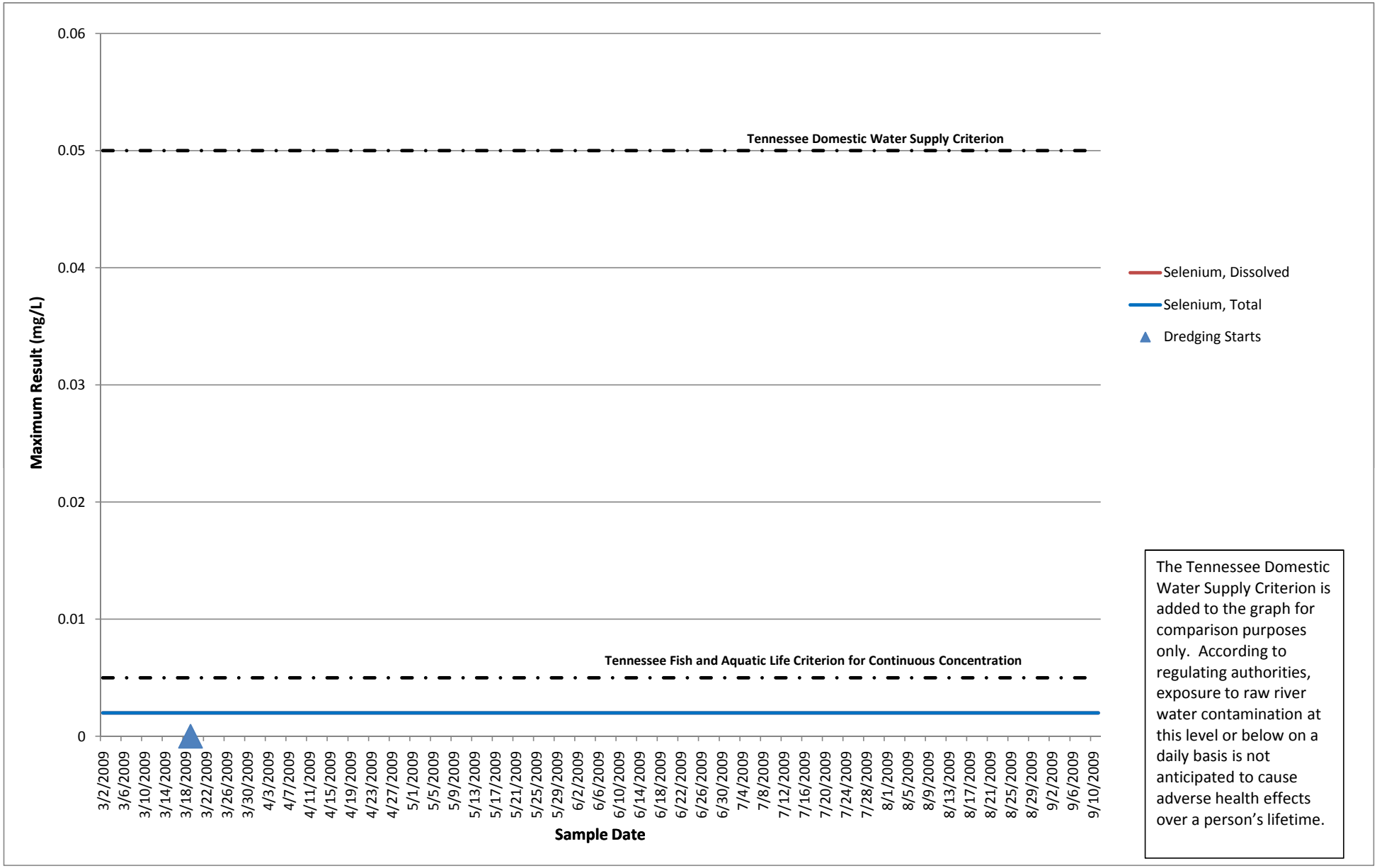
Note: The Result line represents the maximum value reported for Mercury From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers for any location for a given day.

Report Generated: 9/23/2009

Figure 4

Selenium From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers

TVA - Kingston



Note: Results are reported at the lowest concentration that laboratory instruments can reliably measure.

Note: The Result line represents the maximum value reported for Selenium From all Standard Sampling Locations on the Emory, Clinch, and Tennessee Rivers for any location for a given day.

Report Generated: 9/23/2009